



#### IMPORTANT INFORMATION

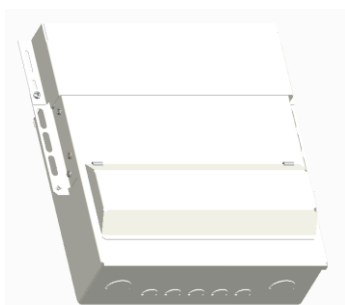
*This unit should be installed by a qualified competent person in accordance with all relevant legislation and regulations including building regulations and wiring regulations BS7671. If in doubt contact a qualified competent person.*

- Turn off all power supplying this equipment before working on or inside the equipment.
- Always use a properly rated volt-sensing device to confirm the power is off.
- Replace all devices, doors and covers before turning on the power to this equipment.
- To avoid ingress of swarf and similar material, always remove gland plates to allow cutting/slotting for cable entries.

**Failure to follow these instructions could result in serious injury or death.**

#### **DO NOT USE POWER TOOL SCREWDRIVERS ON ELECTRICAL CONNECTIONS**

Product	Main switch Controlled	RCCB Protected	Split-Load	Multi-Tariff	Dual Tariff Split-Load	Dual RCCB	Hi Integrity	Max cable Capacity
Enclosure	✓	✓	✓	✓	✓	✓	✓	
Busbar	✓	✓	✓	✓	✓	✓	✓	
100A DP Main Switch (100/MI2)	✓	X	✓	✓	✓	X	X	50mm <sup>2</sup>
100A DP Main Switch with tap off (100/2MT)	X	X	X	X	X	✓	✓	50mm <sup>2</sup>
Main incoming RCCB	X	✓	X	X	X	✓	✓	50mm <sup>2</sup>
Split-load RCCB	X	X	✓	X	✓	✓	✓	50mm <sup>2</sup>
MCBs	✓	✓	✓	✓	✓	✓	✓	25mm <sup>2</sup>
RCBOs	✓	X	✓	✓	✓	X	✓	16mm <sup>2</sup>
SPD	✓	✓	✓	✓	✓	✓	✓	35mm <sup>2</sup>



Main Switch	BSEN 60947-3
SPD	BSEN61643-12

- The consumer unit must be de-rated as follows: - Max. 100% rating, continuous load (in excess of 1 hour) 90% of in-comer rating. A diversity factor of 90% should be applied to all RCDs.

#### **Ambient Temperature Considerations**

The Starbreaker MCBs are calibrated to meet the 30°C Ref Calibration Temperature requirements of BSEN 60898.

At other temperatures the following rating factors should be used:

At 60°C	0.9	At 20°C	1.0	At 0°C	1.1
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Adjacent thermal-magnetic MCBs should not be continuously loaded or approaching their nominal rated currents when mounted in enclosures. It is good engineering practice to apply generous derating factors or make provision for adequate free air between devices. In these situations, and in common with other manufacturers, we recommend a 60% diversity factor is applied to the MCB nominal rated current where it is intended to load the MCBs continuously (in excess of 1 hour).

Before fitting the front cover, **check the tightness of all screw type connections, including factory made connections. Check that all live prods on the devices are fully inserted and located into the live busbar.**

- Only Crabtree Starbreaker range busbars, MCBs, RCCBs, RCBOs and main switches must be used within the Crabtree Starbreaker range of units.
- The total current supplied by the unit must not exceed the rating of the incoming main switch or RCCB or any additional limitation (as shown on the way label).
- The total sum of the individual MCB ratings may exceed this value where there is appropriate diversity on the installation.
- This product is suitable for mounting within a meter cabinet only and is rated at IP2XC.
- The consumer unit and associated components have been type tested to the following specifications:

Consumer Unit	BSEN61439-3
MCB's	BSEN 60898 – Type B or C
RCCB's	BSEN 61008-1
RCBO's	BSEN 61009-1 Type B or C





## 1. Enclosure Mounting

- This product is suitable for mounting within a meter cabinet only and is rated at IP2XC.
- Remove appropriate KO's, cover and outer cable shroud from the enclosure. Note, the top gland plate can be removed for ease of KO removal.
- The unit must be mounted with the gland plate facing upwards.
- Mount the unit into its installation position, Both 'L' brackets provided must be fitted in positions 'a' OR 'b', see Fig 1.1. When installed the base of both 'L' brackets should sit flush against the enclosure back wall in order to support the unit. Assess which 'L' bracket position (a OR b) best suits the installation and which bracket fixing holes should be used (the depth of the bracket fixing can be adjusted using the various bracket holes). Remove the unit from the installation.
- Remove the appropriate 'L' bracket fixing blanks from positions 'a' OR 'b' (4 per bracket) by drilling or knocking out from the inside of the unit. The DIN rail assembly should be removed to aid the 'L' bracket installation.
- Use the following fasteners provided to attach each 'L' bracket to the box: 4 x M5 screws, 4 x M5 nuts and 8 x M5 serrated washers, See Fig. 1.1.
- Mount the unit into its installation position. Secure the wing fixings first using M6 fixings. Both 'L' brackets should then be screw-fixed with M6 size screws (not supplied) to the cabinet back wall. See Fig. 1.2.
- Check the unit is securely mounted.
- Bring cables through appropriate knockouts.
- Route main incoming cables to desired position.
- Replace interior if previously removed.

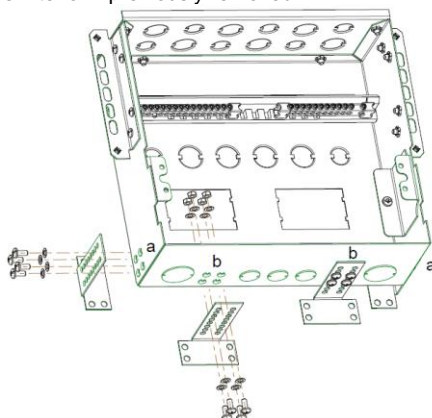


Fig. 1.1

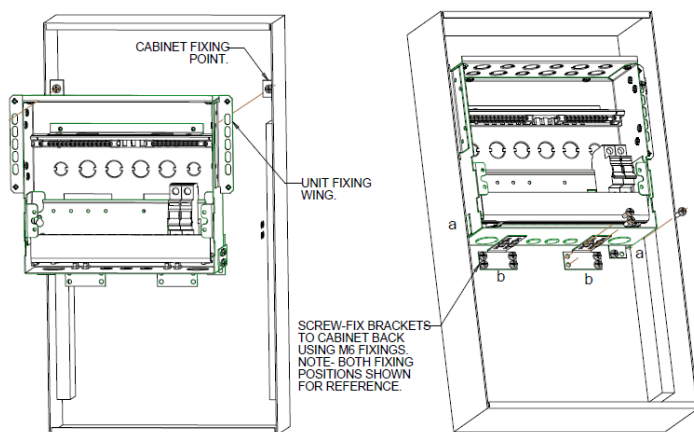
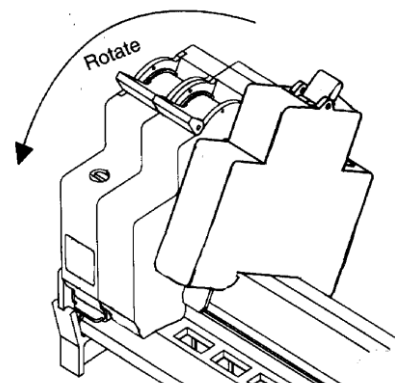


Fig. 1.2

## 2. Installation of MCBs and RCBOs

- MCBs and RCBOs are mounted in the same manner as main incoming devices (Fig. 2.1).



Ensure the retaining clip engages.  
Fig 2.1

- It is recommended that the highest rated MCB or RCBO is fitted nearest to the main incoming device (or split-load RCCB where relevant).

## 3. Circuit Connections to MCBs and RCBOs

Device	Max. Cable Capacity	Recommended tightening torque
Main Switch / RCD	50 mm <sup>2</sup>	2.3 Nm
MCB	25 mm <sup>2</sup>	2.3 Nm
Standard RCBO	Outgoing connection – 16 mm <sup>2</sup>	2.5 Nm
Miniature RCBO	Outgoing connection – 16 mm <sup>2</sup>	2.5 Nm
Earth & neutral terminals	16 mm <sup>2</sup>	1.7 Nm
SPD	1.5 mm <sup>2</sup> to 16 mm <sup>2</sup>	3.0 Nm
	25 mm <sup>2</sup> to 35 mm <sup>2</sup>	4.5 Nm

**Use No.2 Pozidrive bit**

- Cut, dress and connect circuit conductors to appropriate MCB, RCBOs, neutral and earth terminals. (Figs 3.2 and 3.3)
- Ensure that each earth and neutral outgoing circuit is correctly made to its corresponding numbered terminal (Figs 3.2 and 3.3)

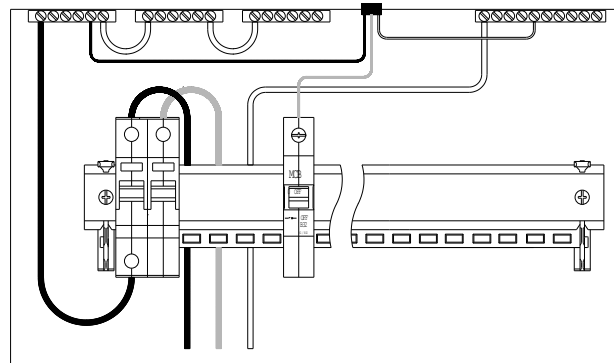
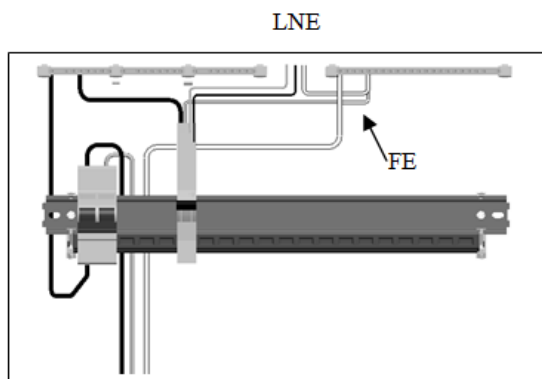


Fig 3.2 Connections to MCBs



NLE

Fig. 3.3 Connections to RCBO's

#### 4. Blanking of unused ways

- Blanking plates should be fitted to cover any spare modular ways. Blanking plates are available if required.

#### 5. Installation of Control Devices

- Control devices such as timers, transformers and contactors can be fitted to the consumer unit in any position on the mounting rail. The incoming supply for the device must be fed from an MCB (*not directly from the busbar*).
- Detailed installation instructions are supplied with all Crabtree control devices.

#### 6. Replacement of Covers.

- Fit the front cover. The outer cable shroud should be fitted after the front cover is fitted. The shroud is screwed directly to the unit fixing wings. The shroud can be adjusted vertically to ensure all cables entering the top gland plate are shrouded. See Fig. 6.1. And 6.2.

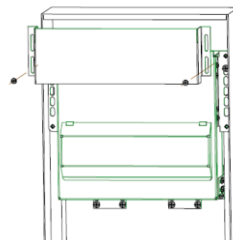


Fig 6.1

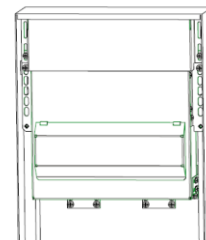


Fig 6.2

#### 7. Circuit Identification

- The consumer unit way label is supplied with the consumer unit. This should be fixed into position below the circuit devices on the front cover.
- Pre-printed identification labels are provided and should be fixed in position on the way label according to the outgoing circuit.

#### 8. Testing of the installation

- After completion of the installation, it is essential that it is tested in accordance with the latest Edition of the IET Wiring Regulations for Electrical Installations (BS7671).
- It is important that the following are included in the above. - Operation of the test button of any RCDs fitted. Verify that the earth loop impedance requirements are satisfactory.

